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AUTHOR Carter, Richard F.
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ABSTRACT

What mass communication effects are possible that have not yet occurred because no effort has been made to achieve them? Why has there been only limited success in mass communication efforts attempted already? For people to be communicatively affected, they have to be behaviorally affected. People are generally weak behaviorally, especially in the observing sector. Because communicating is an extension of observing, people are generally too weak to communicate effectively--in producing and/or making use of messages. Comprehension of weaknesses in communication permits better understanding of the limited effects so far achieved, provides better preparation for improving effectiveness, and makes more effects available for observation. Taking the "step" as the basic behavioral unit, the process can be viewed as a relationship between observing, the observed, and moving. Communicating is not well understood, and there is a lack of development in the observing capability. Quite a few observing capabilities other than the orientational and constructive modes can be useful in promoting communication: making comparisons; maximizing the utility of values; observing outcomes; etc. Occasionally a teacher can see where he/she has been effective in conveying this or that idea for students. Communicating is an effective extension of observing only when supported by adequate observing capability. To improve communicating, it is necessary to understand how observing must work if successful communicative "steps" are to be taken. (Twenty-two notes are attached.) (SG)

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Mass Communication Effects: A Weakness Theorem

Richard F. Carter
Professor, School of Communications
University of Washington DS-40
Seattle, WA 98195
(206) 543-9676/543-2660

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Mass Communication Effects:
A Weakness Theorem

Discussions of mass communication effects, beyond an acknowledgment of their constitutive contribution to societal behavior (e.g., Dewey, 1916; Giddens, 1989), have tended to focus primarily on the question of persuasion in mass media effects. We see this as far back as Lasswell's concern with propaganda (1927). More recently, especially since Klapper's summary review (1960) of the mass media's persuasive effects, the empirical scene in mass communications research has been dominated by the issue of "limited effects."

Given that mass media are a solution to the problem of mass communication -- and not the only possible solution at that, the larger question of mass communication effects is not necessarily best seen in this light. The one issue of limited effects with respect to the effectiveness of the mass media (as one possible) solution hardly does justice to a comprehensive mass communication effects research agenda.

We need answers to at least two major mass communication effects questions. Our concern for mass media effects has overlooked one of these questions almost completely, and debate on the issue of limited effects has not given us a satisfactory answer to the other.

My first question is:

> What mass communication effects are possible that have not yet occurred because no effort has been made to achieve them?

My second question is:

> Why have we had only limited success in the mass communication efforts we have attempted?

The first question is of obvious importance as we look to the further realization of the constitutive role for communication in collective behavior. But there are also possibilities for improving the mass media, possibilities which we have not been able to pursue because we lack a fundamental sense of communicating on which to base the invention of better solutions. The second question more closely touches on the now classic issue of limited mass media effects.

There is a common thread in these questions. Both pertain to

effects that have not been observed. Their difference lies in whether an effort has been made to achieve effectiveness. Another common thread, I shall argue, is that in both cases effects have not been found because of communicative weakness. Their difference in this respect is that in one case the weakness is so great that communicating was not attempted, while in the second case the weakness is significant enough to account for a significant part of the limited effects findings.

I do not intend to retread the battleground of limited effects here. Indeed, I would like to get us off this agenda and on to a more productive one. However, as Charles S. Peirce noted, we have no option but to start from where we are. So I shall present my case for a new agenda as an argument against the theoretical basis usually advanced for the design of, and interpretation of results from, our empirical research into such mass media effects.

I shall argue that people's communicative weakness is largely responsible for our empirical findings of no effect and of limited effect. I shall argue that the way we have thought about mass media effects has overlooked significant aspects of this weakness. I shall also argue that when we have improved our sense of what communicating and mass communicating are like, we shall still find limited effects. But we shall then be much better prepared to improve our communicative effectiveness ... and better prepared to find effects -- the old as well as the new.

I hypothesize: For people to be communicatively affected, they have to be behaviorally effective.

And: People are, by and large, rather weak behaviorally. Their control needs exceed their control capability. Much that might affect (and help) them can not do so.

And: People are especially weak in the observing sector of their behavioral capability. They are unable to "see" most of what is to be "seen." This is particularly the case for thinking.

And, finally: Because communicating is an extension of the observing capability, people are generally too weak to communicate effectively -- in producing and/or making use of messages. For example, as we know from journalism, poor observers make poor interviewers and reporters. They also make poor listeners and readers.

This combination of hypotheses I shall refer to as the weakness theorem. This weakness, I shall argue, is related to, but is much more profound than, illiteracy and incompetent word usage -- the more popular notions of communicative weakness.

I also think there is some connection between this general communicative weakness and findings of relative ineffectiveness in mass media effects research. For example, suggestive hints of

weakness seem present in findings of less media effectiveness under conditions of: low topic involvement (reviewed in Ray, 1973); low intellectual involvement (Petty and Cacioppi, 1984); low education (Tichenor, Donohue, and Olien, 1980); low interest (Genova and Greenberg, 1979); low message discrimination (Salmon, 1986); social isolation/laggard (Rogers, 1983); low newspaper usage (Pettey, 1988); lack of prior knowledge (Dervin, 1980). There is suggestion here of self-selection, of people whose weakness leads them to avoid or to abandon mass media messages.

I intend to expand the picture of weakness in behavior's observing and communicating capabilities well beyond such instances. Weakness in other behavioral aspects will be identified, weaknesses which might help account for some of the relative effectiveness findings, weaknesses whose greater potential significance lies in accounting for what can not yet be found as effect because it can not yet be effected.

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Somewhat paradoxically, my first question (what mass communication effects are possible, but unobserved) will be easier to answer than my second question (why are mass communication effects limited). This apparent paradox turns on the matter of what we think <u>behavior</u> is like, and the concomitant matter of how we might best go about deriving its principles. We have some serious theoretical difficulties with these matters in the field of mass communication. We have tried to generate theory from empirical generalizations about the connections among particulars. The problem of mass communication reminds us that our understanding of behavior must be as applicable to behavior that is possible but unachieved as it is to what has been achieved. Collective behavior, which demands effective mass communication, has no physiology of its own; it should not, it need not, be understood solely in terms of conditions currently evident as properties of corporate bodies. We should not convert the relationships which collective behavior comprises to imputed properties of individuals. (By doing so, we produce much of the "micro-macro" problem.)

I must immediately clarify the sense in which I am using the concept of "behavior." Many still take the view, with Klapper (after Skinner [1953] and other behavioral determinists), that behavior is the manifest <u>movement</u> of a body in relationship to some other thing, typically an "object." To observe movement, we need only to establish its direction and velocity. To understand movement, we need only to establish the orientational source of its direction and the motivational force for its velocity.

On this view, behavior is seen as independent of, and in addition to, such conditions of observing as suggested by the concepts of "cognition," "feelings," "emotions," "knowledge," "information," "belief," "opinion," et al. In my view, observing is just as behavioral as moving. Both are special kinds of relationship: relatings. Therefore, all the conditions suggested

by these observational concepts are behavioral. These observational conditions are very poorly served by these concepts as they have been used in the restricted (Behaviorist) sense of body movement. The behaviorists, in the name of methodological reliability, set aside most of behavior's observing sector as unreliable (e.g., the subject of introspective report and speculative conceptions). Instead of concepts usefully descriptive of observing we encounter concepts like "attitude" and "motive," concepts that are tautological to adient and abient movements.

As introduction to a different sense of behavior, I shall sketch some of the stunting effect that this restricted sense of behavior has had on the issue of mass media's "limited effects." I say "issue" advisedly. Ultimately, the limitations on mass media effectiveness is a resolvable, empirical question. It is the exemplar (model) and the paradigmatic (theory) from the behaviorist legacy that have so handicapped us. So much so that it can truly be said that our problem in mass communication research is not so much that we have a dubious "model of limited effects" as that we have an unproductive "limited model of effects." We do not know enough about behavior to be able to make an informed attempt to invent more effective behavioral tools.

The issue of "limited effects" has been raised within the context of a model which focuses on movement. How do messages have an effect? Given media exposure and linguistic competence -- i.e., taking most of the communication process for granted, the exemplar here has been some variant of forces at work. The person may possess disposing or predisposing (Green, 1954) forces relative to some object (e.g., attitudes) or the object may possess forces of attraction for the person (e.g., Lewin's "valences"). The communication content, as "information," possesses potential force; it is a "map of reality" which provides direction, if not motive, for movement. "Influence," "persuasion," "resistance," "obstinacy," and "selectivity" are concepts which attest to this sense of people being moved. Our messages may move other people to do one thing rather than another -- i.e., exhibit selectivity. We may be moved by messages to select one thing or another. It is in this sense of forces at work that we have been so devastatingly enamored of power as the characteristic metaphor for behavioral effectiveness, communicative and otherwise. Power is the dominant (sic) idiom for behavioral interpretation.

What this exemplar view of behavior has given us is a focus on "powerful" and "power-potential" properties of people and/or objects, relative to the movement aspect of the relationships among them. In this regard, our behavioral model is merely incomplete. The mysteries of this "black box" which is "mind" are set aside, in hope that physiology will eventually enlighten us. Until then we struggle, as day-to-day actors or as scientific observers, to overcome the imperfections of our observations. We cope as best we can with noises, dulled sensations, misperceptions, subjectivity, misunderstandings -- with all

manner of what is interpreted, in this model, as observational "error" in directing and accounting our movements.

The remainder of those relationships, the part that is not movement, the rest of behavior -- has been further subverted by the paradigmatic foundation of learning theory. We have been working on the assumption that we understand behavior's observing adequately when we view it as essentially a learning process. (On this view, learning is to observational acquisition as knowledge is to observational acquaintance. Those espousing this view treat learning and knowledge as synonymous.)

People often do learn from attending to messages. Then they may move on the basis of what they have learned. The problem for mass media effectiveness is that few moves are predicated just on what has been learned from media messages. More mystery. What is responsible for this state of affairs? "Mediating forces," says Klapper. When learning theory fails, when it can account only for our successes, we retreat to the metaphor of power. We envision some sort of "success hierarchy," with exposure, attention, learning, and then "attitude" as necessary, but lesser, effects on the way to persuasion (e.g., Lavidge and Steiner, 1961; McGuire, 1973).

But is it not conceivable that learning theory is just inadequate as a general behavioral theory applicable to communicating and effective communication? Is it not possible that "information processing" is only the most recent relabeling for an antiquated theoretical assumption -- that (somehow) the orientational power of communication content carries the flow of force from the observed to the acquiring (i.e., learning) person?

Yes. On the learning view, there has been no productive concern for the observing aspect of the behavioral relationship. Learning is a very simplistic notion of what behavior is like for any person (actor) taking steps (in action) in this world. Learning theory's neglect of observing has been patent. But only recently have developments in cognitive psychology and artificial intelligence begun to redress the neglect.

Perhaps the worst shortcoming is that behavior is far too orientational on this learning view. Historically, the problem appears to be attributable to an underlying postulate of determinism. Those seeking the order of things -- the laws of nature -- assumed that behavior was somehow instructed. They then turned to seeking the instructional source(s). From whence came instruction/orientation? From within the body (instincts, traits, genetic inheritance, etc.)? From objects outside (situational factors, the environs, nurture, etc.)? This is not so much a paradigmatic (theoretical) failure as it is the inappropriate presupposition common to most scientific inquiry into behavior. What did not seem to fit was left to art, religion, politics, humanism ... or chance. There was little effort to provide a theoretical understanding for all that is behavioral.

It is not the case that nonorientational phenomena have been unobserved. By now, we have good reason to respect the presence of reorientation in behavior. Cybernetic and homeostatic features are well documented in the human experience. These features are to be found in our own behavior as well as in the behavior of the mechanisms we have invented. Similarly, construction is a very distinctive feature of human behavior, evident in creativity and invention. But although we have noted such phenomena in our experience, we have been unable to reconcile them with the orientational type of behavioral theory.

Reorientation and construction phenomena demand more than learning theory can offer. They require more observational capability than the orientational focus would attribute to us as step takers. For example, additional observing capability is even indispensable for making any use in a next step of that which we have already learned (when we have learned more than one thing). Behavior demands much of the observing capability, as we shall see, far more than the orientation postulate embraces and far more than learning theory can account.

The behavioral exemplar and behavioral paradigm we have been using for mass media effects put far too much emphasis on movement (e.g., "a forceful statement," "a moving statement") and not enough on the observing sector of behavior. Given that communicating has been invented as a means for extending our observing capability, it would be hard to find more debilitating exemplar and paradigmatic foundations on which to build an appropriate study of mass communication effects. We have borrowed from physics and psychology disastrously. Our later casting about for conceivable learning effects -- e.g., agenda setting -- has not improved our situation all that much. It has, however, seemed to provide sufficient justification for continued use of this paradigm. Learning theory does, after all, explain behaviors when learning is the only aspect of behavior we try to explain. Klapper's "agenda effect" on scholars in our field is eloquent testimony to that.

Meanwhile, the force metaphor persists. Now we have come to settle for modest empirical generalizations of demonstrable "causal" forces at work (Merton's [1957] "middle range"). We are reduced to expecting pistolic rather than cannonic impact from our messages. But we still think in terms of forces at work. We are coming to be at peace with the generic finding that some messages have some effect some times on some people (Berelson, 1960). We are at peace not because we understand this result but because we can not help but acknowledge it. In line with McGuire's (1986) "contextuality" interpretation of this result, we seem willing to settle for the prospect, as much for actors as for observers, of endless situational constraints (combined forces) applicable to communicative attempts.

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How is the actor to know better -- to be more

communicatively effective? How is the observer to know better -- to see more of communicative effects? What would be better as exemplar and as paradigm? My "weakness theorem" suggests some answers to these questions.

A better paradigm would be a theory of behavior in which the observing capability is fully covered. Then, with that understanding in hand, the better exemplar would be that model of behavior in which strength, not power, is featured. It is my contention that if we comprehend the weaknesses in our communicating, we shall not only better understand the limited effects so far achieved; we shall also be better prepared to improve our effectiveness ... and thus make more effects available to be observed. Mediating forces will become relatively less significant than enabling capabilities in producing and accounting communicative success.

Given the challenges we face in this world, to live and work together, the strength (of step) model seems much preferable to a model of a power struggle (between step taking bodies). The issue of limited mass media effects is dwarfed by comparison with the problem of developing a mass communication capability for sustaining peaceful, democratic societies.

If we comprehend the nature of our weakness in communicating, then we shall be able to (constructively) invent tools with which to lend strength to our efforts. That we have accomplished much with the communicative technology so far invented (e.g., languages, media) should not blind us to the needs we still have. These needs lie in the badly neglected observing sector of behavior. I shall turn now to a behavioral theory which encompasses many of the neglected observing aspects, then conclude with an example of how we might strengthen our communicative capability ... and come to understand communicative effectiveness in both of its realizations: (the actor's) making a behavioral difference and (the observer's) finding a behavioral difference.

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At the heart of all behavioral theories is the working hypothesis that moving (of some kind) somehow depends on observing (of some kind). Planning or deciding what to do implies this. "Mind and body" and "mind over matter" allude to this; but they do not capture much of this common sense of what behavior is like because they reify observing into "mind." Taking the step as the basic behavioral unit (methodologically analogous to the atom as a basic unit of bodies -- so that we can conceive of a structure for behavioral process), we realize that the differences we make in our moving are contingent upon differences we make in our observing. However, this contingency and the significance of the observing aspect may then be very much taken for granted, as when an observed external "stimulus" is said to be associated with a "response" type move:

Og:Od -> Mg (1)

where: observing, Og, serves to orientationally involve the observed, Od, in contingent association, ->, with the moving, Mg.

The "means-end" sense of behavior links the combination of observing and moving to a behavioral outcome, Ot:

$$(Og \rightarrow Mg) \rightarrow Ot \qquad (2)$$

The potential import of observing is expanded to involve outcomes, but its role is not explicated. Observing could, for example, readily involve constructive effort, given the fact that one kind of behavioral outcome is a product.

This second sense of the behavioral unit approximates one view of the communicative step. We often think of communication as content, as the special kind of outcome of a step in which observing, Og, leads to a special kind of communicative moving (e.g., making sounds), Mg^{cmu}, and this to an observation, On^{cmu}:

$$Og \rightarrow Mg^{cmu} \rightarrow On^{cmu} \qquad (3)$$

These are communicative moves such as the oral moves we make when we speak or the inscriptive moves we make when we write or draw. The observing here does not have to be of something external. For example, people give expression to how they feel or to what they remember. (The term "expression" confounds the moving and the [observational] outcome.)

Another sense we have of communication brings us closer to the issue of mass media effects. In this case, the observing is typically of something external, Og:Od. The observation produced, On^{cmu}, is intended to be shared, such that the observation might be utilized by others to extend their observing, $Og_{(On)}$:

$$Og{:}Od \rightarrow Mg^{cmu} \rightarrow On^{cmu} \qquad (4a)$$

$$Og_{(On)} \rightarrow Mg \rightarrow Ot \qquad (4b)$$

The question we ultimately face in mass media effects is whether, and then how, the proffered observation becomes involved in the step taking of any prospective users. How does the observation get from (4a) to (4b)? Is it so simple as:

$$Og{:}On^{cmu} - Og_{(On)} \qquad (5)$$

Here the picture is one of very simple acquisition, ala learning theory. But there is nothing simple about exposure and attention -- and "decoding," let alone what comes after that.

* Exposure is a mode of observing responsive to the possibility that something relevant might be encountered at any time from any quarter. Its openness invites irrelevance. It is necessarily a very diffused observing capability. It is known to be limited by the time-space distance between (4a) and (4b). Mass media's mass production and mass distribution have done much to overcome this weakness.

* Attention is a mode of observing required for focusing on something in particular. Its known weakness is the neglect of other potentially relevant particulars. To follow one thing, for example, is to forego following (at least for the time being) other things that might be relevant.

(Note: I shall be using the "*" symbol to designate various aspects of the observing capability.)

But do exposure, attention, and "decoding" tell us the whole story of how an observation produced in one step becomes a party to instruction in another step? How does behavior's observing work so as to make use of others' observations? When the tool usage capabilities implied by "decoding" are at hand -- i.e., the various "literacies," do we now understand how the process of communication works? Do we fully understand communicating as behavior? Do we understand communicating as an extension of observing, an extending which requires observing to be strong?

No. Rather clearly, we do not understand communicating very well at all. We have, to be sure, gained some communicative strength through inventing and using such communicative tools as languages and the media. But if we understood more about observing and communicating we would surely be inventing and using still more tools -- rather than debating the extent of our success and worrying about whether television viewing produces a loss in the communicative tool usage skills people may have once had. Losses of linguistic usage capability are worrisome; like aphasias, they are damaging to individual and collective observing capability. Such losses in a media audience may tempt the media to offer concomitantly weaker informative efforts because they depend on audience acceptance for financial survival.

But perhaps of even greater peril is the sector of yet undeveloped observing capability. This lack of development is especially serious when the moves we must make become more demanding. Moves, for example, such as those we need to make in regard to population growth. Our undeveloped observing capability is exactly that aspect of behavior which has been so badly neglected by the "learning and motivation" approach that we have taken to the problem of effective communicating. We need a fuller

view of what communicative behavior comprises.

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The simple contingency view of the observing-moving relationship in step taking has one important virtue. I shall note that feature here because I do not see that anywhere near enough emphasis has been put on this characteristic by those studying any kind of communication effects. The feature is this: In the behavioral context which is the step, a major task of observing is that of pointing the way for moving -- and toward the outcome.

Thus, any observational product from one step which is to become involved in another step (cf. 4a-4b) must be, as we say, "to the point." For this reason, we ask of others' messages, "What's the point?" -- as we say to ourselves, "There is one, isn't there?" "So what?" is a very reasonable question. If instead, we ask, "What does that mean?" or even, "What do you mean?", we risk solving only the linguistic difficulties raised. We may come, at best, only to be more familiar with what is being said, without ever knowing what is being talked about and/or its point for the prospective user of the observation.

A "bottom line" concern with communicative power looks to see if the outcome reflects the point which the original observer had in mind. The Pragmatists realized that the consequence (significance) of communicative content takes precedence over its reference and/or usage (signification), even on the question of meaning. Behavior's simple contingency relationship says that we make observing differences in order to make moving differences in order to make outcome differences. This pointed step taking, not a loose notion of causation carried on from the determinist tradition, is what effecting -- and effects -- is like.

* Our pointing capability is limited now pretty much to what we can do with gestures, illustrations, and language tools. Our attempts to communicate swarm with confusion over points made or not made. Examples of lack of understanding and misunderstanding abound (Kendrick, 1987).

The concept of "relevance" captures some of the spirit of this emphasis on points. Lack of communicative success due to content irrelevance is obviously considerable. Relevant points are what the prospective communicator had better have to offer. Relevance, however, implies much more for behavioral involvement than this concern for the pointing potential of communication content. To see how much more would require complete elaboration of step structure. We shall see further hints of relevant aspects in what follows, but a complete accounting must await another time.

* Weakness makes it harder to help produce relevance -- whether the weakness is in the first (point sent) step or in the second (point received) step.

But even the best of pointing does not go far enough to explicate behavior's observing. A greater emphasis on strengthening pointing might even be overdone if the structure of behavior is not completely understood. Pointing is just part of the observing work to be done in taking steps. The relationship between observing and moving is actually quite compound and complex. What of observing after O_g^{On} is achieved? We need to look at still more aspects of our observing -- and the communicative extensions of this observing -- to see where the rest of our weaknesses lie. And there we shall see more reasons for our communicative ineffectiveness.

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What is there that observing must do besides point the way for moving? What else is there that observing must do that could make a difference in whether or not an observation from one step becomes involved in the observing of another step?

The observing-moving relationship is not one of simple contingency, with direction of moving following on instruction from observing. Moving places constraints on observing too. Observing and moving are interdependent aspects of behavior. Moving requires observing to be <u>singular</u>, to provide one point per move. When observing does not furnish singularity, then moving can not proceed. Thus any observed nonsingularity turns out to have extensive control potential. For step taking, an observed nonsingularity is a moment of crucial relevance.

Moving needs more than direction. Life is no car with only a steering wheel. Life, like a car, needs brakes, starter, accelerator, and transmission. At the very least, to take the many steps (in number and kind) that people are able to take, we need observing to supply "start" and "stop" controls on the moves we make -- lest we take, like a heavenly body, only one step per life.

These controls on the beginning and ending of any step can not usefully be simple artifacts of direction giving. Decision making suggests they are: People start when they have direction -- toward the chosen alternative; they stop when they reach the alternative. However, we can not, and do not, go through life making decision after decision. Even given O_g^{On}, we do not necessarily then decide between following the point it makes versus all the alternative points available to us -- i.e., those from remembered learning and/or those also presented to us as alternative choices.

There is a lot to observing that the observer's after-the-fact concern with direction of movement can not tell us. After the fact, an observer may model behavior as though it were primarily a matter of selectivity. But before the fact, step after step, the actor lives by observational relating in a large variety of ways. This is the behavioral circumstance in which

messages come to people. Many of these conditions which can make a difference in whether there is effective communication are not orientational modes of observing.

Inventions, creations, and other constructions are not produced by being decided upon. We produce working ideas, cognitive relations with constructive potential that get us started toward where we shall end up, without requiring an initial "image" of the eventual outcome, ideas that we adjust as we proceed. Similarly, we are able to make use of only part of some learned observation, or to make use of the whole observation as but part of our own larger, embracing observation. We make something of much that we find.

There are quite a few observing capabilities in addition to the orientational and constructive modes. If developed, they can be useful by themselves for controlling moves. And they can be used in combination -- often constructively:

* We can reorient by making comparisons. Memory, an important observing capability, gives us a way of comparing the old and the new. If compared observations reveal a cybernetic nonsingularity (Wiener, 1948) an adjustment can be made to get back on course. However, an inability to follow a message can make this a moot competence. And if those who would follow are not skilled questioners, they will get no help in following. With media, of course, there may be no help available.

* We can maximize the utility of our values. We do not make decisions based on our (many) values so much as we use our values to call a stop to our moving if we encounter something discrepant with one or another of our values. In this way, we can make use of all our values without having to do the impossible -- which would be to try to make use of all of them at once for one behavioral decision after another. Taking exception to message content is a vital, but largely unpracticed competence. Reluctance to question is as widespread as lack of questioning skill. Observing is subverted.

* We can observe the outcome of the prior step in relation to its antecedents, producing knowledges, beliefs, feelings, and superstitions. We develop a rough, but useful, sense of how things seem to work based on our experiences with outcomes. Science formalizes this experience to improve our knowledge. Our less formal tests of such products of observing are not impressive. Communication content may be riddled with misinformation, with things we "know" but whose points are misleading.

* We can use moving to assist our observing. Changing position for a better view is a familiar example. Communicating, as I have already noted, is another. Experimental knowledge is another version, as the eye follows the hand (Bronowski, 1973).

* We can use observing to constructively link many steps,

for nesting step within step, to produce a bridging step (e.g., a "giant step," a "five year plan"), with boundaries defined by the steps' terminals. Behavior can be very molecular in this respect, and communicative capability has much to do with how big our bridging steps can be. Communication is the "carbon," to use the organic chemistry metaphor, of molecular behavior. It provides organization to a life's steps, just as it does for a society's existence.

* (In addition, we have an observing capability to relate the idea to an appropriate move. We have something like a transmission. Any of our several observing capabilities can be linked to any of a variety of moves. Fortunately, this is typically not in need of further tooling and development. It is also less susceptible to damage than are the memory aspects of our observing capability. [Enhanced memory capabilities, it should be noted, remind us that observational strengthening is indeed possible, by exercise as well as by tool.])

We show relatively little observational strength in some of these matters. People start inadvisedly. They can not stop themselves. They do not ask enough questions. They ask dumb questions ("dumb" in the sense of not making an effort to help get the point). They are unable to come up with ideas. They can not express the ideas they do have. They can not understand the ideas of others. They can not produce an idea together. They do not check their progress often enough or well enough. They are hypocritical, unable to live up to their own values. They are unadventurous.

People are often very critical of the observations made available to them (e.g., of "book learning"), but they lack the strength to pursue less orientational paths. They invite leadership from those who then step forward to offer direction. People have come to accept the role of consumer, and the luxury of being an appreciative, if not sophisticated, decision maker. Secure in a freedom of choice, they actually have very limited freedom because they lack the capability to exercise their greater freedom -- that of opportunity.

Ethnic strife, marital strife, mental and emotional disorders, negative advertising in politics, burned out educators, child abuse, generation gaps ... the list of communicative tragedies is endless. We are too weak to communicate effectively. So we are infatuated with power. The weak seem always to covet power. Children want magic's power. Adults want to win the lottery for the power that money might bring them. What the world gets is Hitlers. Perhaps, as Galbraith (1989) suggests, only a strong world economy prevents all hell from breaking loose, with sticks and stones as the mildest of the messages.

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There seems nothing for it but to undertake a broad strengthening of our observing capability if we are to become

more communicatively effective -- and thereby discover more communication effects. The 3 R's as tools are necessary stepping stones, but the elementary will not give us all the foundation we need in order to take stronger steps, individually and collectively, to effect more and to be more affected. And in more ways than the power idiom of persuasion has led us to search.

We need strong, effective communicating to extend our observing capability to where needed collective action can be realized. For that, we need an understanding of observing's aspects to produce the communicative tools we need and the strength to use them. Power obliterates power. Strength builds on strength.

How can we build observational strength? By exercise. And by tools that can add to our strength. Cognigraphics is an example of a cognitive and communicative tool invented to help people think together. Cognition's point about something is joined with appropriate communicative expression. Cognigraphics is a combination of ways to produce, then share, ideas.

This tool is designed to make it possible for people to share an idea whose implications are relatively clear even though the final shape of the emergent idea is probably not at all clear. We speak of the "germ of an idea." "Seed" would be better. An idea can develop as steps are taken if the observing capability includes the necessary nesting competence, such that a sequence of such steps is under its control. The simile of a dog herding sheep to pasture is somewhat suggestive.

The cognigraphic tool should work equally well for developing an understanding of someone else's idea. Pointed questions can probe for the implications of another's idea. That is, we can build a picture of someone's idea. The same "ideational mechanics" are at work as in constructing an idea together -- or an idea of our own. For example, the bicycle can be visualized as a set of relationships (instead of a set of parts and/or a collection of attributes). It is a relationship of inside-outside relationships (e.g., wheel and axle) and before-after relationships (e.g., sprocket and rear wheel; front and rear wheel). Models have changed drastically over the years, but the idea has been basically the same.

The technique builds on Freud's word association. However, because association is not a strong enough cognitive tool for construction (or reconstruction), users of the tool must continue to a second stage, in which they indicate what kind of a relationship obtains between the associated elements.

The same behavioral conditions that make cybernetic mechanisms so strengthening of our efforts (e.g., signal strength problems; reorienting to targets) are at work here. As Wiener noted, continuing feedback and comparison allow us to produce reliable performance with less than reliable components. The same kind of improved performance is possible from continuing

constructive effort.

In beginning to use this tool to improve classroom communication of ideas, it is very apparent to me how communicatively weak we now are. But it is also possible already for me to see where I have been effective in conveying this or that idea to my students. And this is only the beginning. Their participation is exercise. Their work with the tool -- and mine -- will make us stronger. This should continue to increase our communicative effectiveness.

This development goes along with an increased research capability. By providing this tool to help people communicate, we also make visible to scientific observers the occasion and outcome of its use. The technique is similar in this respect to "signaled stopping" (Carter et al, 1973). This visibility should then afford us criterial measures for communicative effects in addition to those of exposure, attention, learning, and persuasion. There is no assumption, of course, that they have to be interpreted as interim ("hierarchic") effects on the way to persuasion.

Communicating is an effective extension of observing only when it is supported by an adequate observing capability. If we are to improve our communicative effectiveness -- and then be able to prove it, we must begin anew with a fuller understanding of how observing must work if successful steps are to be taken.

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